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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,160	12/18/2001	Hung-Chenh Kuo	3722-0115P	9256
2292	7590	04/21/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			WILLIAMS, LAWRENCE B	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			2634	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No. 10/020,160	Applicant(s) KUO ET AL.	
	Examiner Lawrence B Williams	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because:

a.) Examiner suggests applicant replace “time” with “times” in line 9.

Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:

(a.) Examiner suggest applicant rewrite the expression $BM00-00=[R1-(-1.8)]^2$ as $[R1-(-1.8)]^2$ of line 25 of page 2 of the specification.

(b.) Examiner suggests applicant rewrite the phrase “trellises of the n sates into a state” of line 4 of page 11.

(c.) Examiner suggest applicant rewrite the expression “Fig. 11is” as “Fig. 11 is” in line 21 of page 11.

(d.) Examiner suggest applicant rewrite the expression “11is” as “11 is” in line 25 of page 11.

(e.) Examiner suggests applicant replace the word “matric” with “metric” in line 4 of page 12.

(f) Examiner suggests applicant replace the word “candidate” with “candidate” in line 17 of page 12.

Appropriate correction is required.

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3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Allowable Subject Matter

4. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a decoding circuit and decoding method of a Viterbi decoder. A search of prior art records has failed to teach a decoding method comprising; “performing a longitudinal arrangement with respect to a trellis diagram corresponding to the Viterbi decoder so as to obtain a longitudinal arrangement trellis diagram; processing the longitudinal arrangement trellis diagram according to a run length limited (RLL) code so as to obtain a RLL trellis diagram” or “performing a longitudinal arrangement with respect to the original trellis diagram so as to obtain a longitudinal arrangement trellis diagram; processing the longitudinal arrangement trellis diagram according to a RLL code so as to obtain a RLL trellis diagram” as disclosed in claims 1 and 9 respectively. Nor does the prior art teach a decoding circuit comprising; “a data string controller for receiving the decision bit outputted from the add-compare-select unit and deciding the direction of the output string of the decision bit; a trace mite-in register array for receiving the decision bit outputted from the data string controller and tracing to obtain a merged value” along with the remaining limitations of claim 12.

Conclusion

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Nishiya et al. discloses in US Patent 5,940,416 Digital Signal Decoding Apparatus And A Decoding Method Used Therein.

b.) Zhong et al. discloses in US Patent 5,970,104 Method And Apparatus For Generating Branch Metrics And Branch Indices For Convolutional Code Viterbi Decoders.

c.) Kobayashi et al. discloses in US Patent 5,563,864 Information Recording And Reproducing Apparatus.

d.) Kamada discloses in US Patent 6,654,929 B1 Viterbi Decoder And Viterbi Decoding Method.

e.) Todoroki discloses in US Patent 6,697,442 B1 Viterbi Decoding Apparatus Capable Of Shortening A Decoding Process Time Duration.

f.) Yoshinaka discloses in US Patent 6,373,413 B1 Data Decoding Apparatus And Data Decoding Method.

6. This application is in condition for allowance except for the following formal matters:

a.) Specification objections as noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
April 8, 2005


AMANDA T. LE
PRIMARY EXAMINER